

Abstract

A piping elbow capable of facilitating a fluid flow direction change in a smaller space than conventional piping elbows, without causing the larger pressure losses found when using conventional elbows in the equivalent space. Piping elbows of the present invention comprise a substantially-cylindrical body having a first end, a second end, and a substantially-constant inside diameter; a tangential inlet attached to the body near the first end of the body and having an inside diameter smaller than the inside diameter of the body; and a tangential outlet attached to the body near the second end of the body and having an inside diameter smaller than the inside diameter of the body. Fluid flows linearly through the tangential inlet and enters the body. Inside the body, linear motion of the fluid is converted into a rotational or spiral motion. The fluid in the body continues its spiral motion as it also moves axially through the body toward the tangential outlet. The fluid exits the body through the tangential outlet. Upon exiting through the tangential outlet, rotational or spiral motion of the fluid in the body is converted back into linear motion. The piping elbows can comprise two substantially-identical components attached to each other. The two substantially-identical components can be removably attached to each other and oriented at a selected degree relative to each other to effect a desired change in the direction of fluid flow.